



IN THE CLAIMS

The following listing of claims replaces all prior versions of submitted claims:

Claims 1-12 (Cancelled)

13. (Previously Presented) A method for electrical stimulation of a subject's brain for treatment of neural disorders, said method comprising:

connecting a pulse generator to a digital signal processor and supplying digital signal pulses to said digital signal processor for producing an approximate sine wave current waveform which is further processed and output to first and second pairs of surface electrodes, wherein first and second circuits are created, respectively; and

positioning said first and second pairs of surface electrodes at predetermined peripheral surface stimulation sites on the subject's skin surface based at least in part on a neural image.

14. (Previously Presented) The method according to claim 13, wherein said method further includes creating an interferential current with a base medium frequency of at least 1 KHz but no more than 100 KHz.

15. (Original) The method according to claim 14, wherein said method further includes creating the interferential current with a resultant beat frequency of no more than 250 Hz.

16. (Original) The method according to claim 13, wherein said method further includes positioning said first and second pairs of surface electrodes using positron emission tomography and neural imaging devices to locate said peripheral surface stimulation sites.

17. (Original) The method according to claim 13, wherein said method further includes varying said positioning of said first and second pairs of surface electrodes.

18. (Original) The method according to claim 13, wherein said method further includes applying said approximate sine wave current waveform to said peripheral surface stimulation sites for at least 30 minutes but no more than 60 minutes.

19. (Previously Presented) A method for electrical stimulation of a subject's brain for treatment of neural disorders, said method comprising:

connecting a pulse generator to a field-programmable gate array and supplying digital signal pulses to said field-programmable gate array for producing an approximate sine wave current waveform which is further processed and output to first and second pairs of surface electrodes, creating first and second circuits, respectively; and

positioning said first and second pairs of surface electrodes at predetermined peripheral surface stimulation sites on the subject's skin surface based at least in part on a neural image.

20. (Original) The method according to claim 19, wherein said method further includes creating an interferential current with a base medium frequency of at least 1 KHz but no more than 100 KHz.

21. (Original) The method according to claim 20, wherein said method further includes creating the interferential current with a resultant beat frequency of no more than 250 Hz.

22. (Original) The method according to claim 19, wherein said method further includes positioning said first and second pairs of surface electrodes using positron emission tomography and neural imaging devices to locate said peripheral surface stimulation sites.

23. (Original) The method according to claim 19, wherein said method further includes varying said positioning of said first and second pairs of surface electrodes.

24. (Original) The method according to claim 19, wherein said method further includes applying said approximate sine wave current waveform to said peripheral surface stimulation sites for at least 10 minutes but no more than 180 minutes.

25. (Previously Presented) A method for electrical stimulation of a subject's brain for tremor control, said method comprising:

positioning at least two pairs of surface electrodes at predetermined peripheral surface stimulation sites on the subject's skin surface based at least in part on a neural image; and
supplying electrical stimulation to said at least two pairs of surface electrodes.

26. (Original) The method according to claim 25, wherein said method further includes supplying electrical stimulation from the group consisting of TENS, neuro-muscular, ultrasound, interferential, PEMF, EMF and mechanical stimulation.

Claims 27-32 (Cancelled)

33. (Previously Presented) A method for electrical stimulation of a subject's brain for treatment of neural disorders, said method comprising:

positioning at least one pair of surface electrodes at predetermined peripheral surface stimulation sites on the subject's skin surface based at least in part on a neural image; and

connecting a pulse generator to said at least one pair of surface electrodes and generating an electrical current.

34. (Original) The method according to claim 33, wherein said method further includes creating a pulsatile current with a with a square wave output, an amplitude range from 0-150 mA and a phase duration range of 1-500 μ sec.

35. (Original) The method according to claim 34, wherein said method further includes creating the pulsatile current with a frequency range from 1 pps to 2500 pps.

36. (Original) The method according to claim 33, wherein said method further includes positioning said at least one pair of surface electrodes using positron emission tomography and neural imaging devices to locate said peripheral surface stimulation sites.

37. (Original) The method according to claim 33, wherein said method further includes varying said positioning of said at least one pair of surface electrodes.

38. (Original) The method according to claim 33, wherein said method further includes applying said electrical current to said peripheral surface stimulation sites with a duty cycle from as little as 1 second to 120 minutes on with an off time as little as 1 second to as long as 120 minutes.

39. (Original) The method according to claim 33, wherein said method further includes applying said electrical current continuously without a duty cycle.

40. (Previously Presented) A method for electrical stimulation of a subject's brain for treatment of neural disorders, said method comprising:

connecting a pulse generator to a digital signal processor and supplying digital signal pulses to said digital signal processor for producing an approximate sine wave current waveform which is further processed and output to first and second pairs of surface electrodes, wherein first and second circuits are created, respectively; and

positioning said first and second pairs of surface electrodes at predetermined peripheral surface stimulation sites on the subject's skin surface,

wherein said method further includes positioning said first and second pairs of surface electrodes using positron emission tomography and neural imaging devices to locate said peripheral surface stimulation sites.

41. (Previously Presented) A method for electrical stimulation of a subject's brain for treatment of neural disorders, said method comprising:

connecting a pulse generator to a field-programmable gate array and supplying digital signal pulses to said field-programmable gate array for producing an approximate sine wave current waveform which is further processed and output to first and second pairs of surface electrodes, creating first and second circuits, respectively; and

positioning said first and second pairs of surface electrodes at predetermined peripheral surface stimulation sites on the subject's skin surface,

wherein said method further includes positioning said first and second pairs of surface electrodes using positron emission tomography and neural imaging devices to locate said peripheral surface stimulation sites.

42. (Previously Presented) A method for electrical stimulation of a subject's brain for treatment of neural disorders, said method comprising:

positioning at least one pair of surface electrodes at predetermined peripheral surface stimulation sites on the subject's skin surface; and

connecting a pulse generator to said at least one pair of surface electrodes and generating an electrical current,

wherein said method further includes positioning said at least one pair of surface electrodes using positron emission tomography and neural imaging devices to locate said peripheral surface stimulation sites.

Claims 43-46 (Cancelled)

Claim 47 (Previously Presented) The method of claim 13, wherein said first and second pairs of surface electrodes are configured to provide transcutaneous stimulation.

Claim 48 (Previously Presented) The method of claim 13, wherein said first and second pairs of surface electrodes are configured to provide percutaneous stimulation.

Claim 49 (Previously Presented) The method of claim 19, wherein said first and second pairs of surface electrodes are configured to provide transcutaneous stimulation.

Claim 50 (Previously Presented) The method of claim 19, wherein said first and second pairs of surface electrodes are configured to provide percutaneous stimulation.

Claim 51 (Cancelled)

Claim 52 (Cancelled)

Claim 53 (Previously Presented) The method of claim 33, wherein said at least one pair of surface electrodes stimulates the subject's brain transcutaneously.

Claim 54 (Previously Presented) The method of claim 33, wherein said at least one pair of surface electrodes stimulates the subject's brain percutaneously.